

Application No. 10/798,575
Amendment dated
Reply to Office Action of December 20, 2005

Docket No.: 20696-00090-US

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions and listings.

1. (Currently amended) A fuel feed pump for internal combustion engines having a fuel flow-rate regulating valve on an inlet side, wherein the fuel flow-rate regulating valve comprises:

a housing having a fuel inlet port and a fuel outlet port,

a valve mechanism equipped in the housing for controlling a flow rate of fuel from the fuel inlet port to the fuel outlet port, wherein said valve mechanism includes a chamber that operably accommodates a needle valve having a conical tip that tapers down toward an end of the tip, wherein said chamber includes an opening that communicates with the fuel inlet port; and

a regulating mechanism for regulating a backpressure to regulate a position of a valve ~~element of the valve mechanism~~ the needle valve in response to a system pressure, wherein the needle valve controls the flow rate of fuel from the fuel inlet port to the fuel outlet port by controlling a flow rate of fuel in the opening.

2-3. (Canceled)

4. (Currently amended) A fuel feed pump as claimed in claim ~~[[2]]~~1, wherein ~~the valve mechanism includes a chamber that operably accommodates the valve element and an opening provided in the chamber that communicates with the fuel inlet port, in which a valve seat formed on an edge portion of the opening and the needle valve element cooperate to control the flow rate of the fuel in the opening.~~

5. (Currently Amended) A fuel feed pump as claimed in claim 1, wherein the backpressure regulating means includes means that resiliently urges the needle valve element in a valve-open direction, and a discharged fuel acts on the needle valve ~~element~~ to restrain the needle valve element in the valve-open direction.

6. (New) A fuel feed pump as claimed in claim 1, wherein a stepped guide rod is affixed to a rear end of the needle valve so as to be coaxial with the needle valve.

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7. (New) A fuel feed pump as claimed in claim 6, wherein a guide hole is formed in the chamber.
8. (New) A fuel feed pump as claimed in claim 6, wherein the guide rod is movably supported in the guide hole by a large-diameter portion.
9. (New) A fuel feed pump as claimed in claim 1, wherein the needle valve is formed concentrically with a channel.
10. (New) A fuel feed pump as claimed in claim 4, wherein the backpressure regulating means includes means that resiliently urges the needle valve in a valve-open direction, and a discharged fuel acts on the needle valve to restrain the needle valve in the valve-open direction.
11. (New) A fuel feed pump as claimed in claim 6, wherein the backpressure regulating means includes means that resiliently urges the needle valve in a valve-open direction, and a discharged fuel acts on the needle valve to restrain the needle valve in the valve-open direction.
12. (New) A fuel feed pump as claimed in claim 7, wherein the backpressure regulating means includes means that resiliently urges the needle valve in a valve-open direction, and a discharged fuel acts on the needle valve to restrain the needle valve in the valve-open direction.
13. (New) A fuel feed pump as claimed in claim 8, wherein the backpressure regulating means includes means that resiliently urges the needle valve in a valve-open direction, and a discharged fuel acts on the needle valve to restrain the needle valve in the valve-open direction.
14. (New) A fuel feed pump as claimed in claim 9, wherein the backpressure regulating means includes means that resiliently urges the needle valve in a valve-open direction, and a discharged fuel acts on the needle valve to restrain the needle valve in the valve-open direction.